

ANDREYEV, I.L., inzh.

New method of manufacturing ribbed elements for boilers and heat ex-
changers. Sudostroenie 25 no.1:79-81 Ja '59. (MIRA 12:3)
(Boilers, Marine) (Heat exchangers)

ANDREYEV, I.L., inzh.

Trawler "Sagitta" with a gas turbine power plant equipped with an
"SPGG" gas producer. Sudostroenie 25 no.7:53-56 JI '59.

(Germany, West--Shipbuilding)

(MIRA 12:12)

ANDREYEV, I.L., inzh.

Use of multiple plate friction clutches. Sudostroenie 28 no.2:
69-72 F '62. (MIRA 15:3)

(Clutches (Machinery))

ANDREYEV, I.... Inzh., DZM. U, P.S., Inzh.

New design of the coil type heat exch. apparatus. State
machinestr. no. 145-7 July 3 (MIR 1963)

ANDREYEV, I.I., inzh.

Shipbuilding in the German Democratic Republic. ... (XII. 17:12)

TATOMIR, K.I.; ANDREYEV, I.M., gornyy inzh.

Problems in the reconstruction of mines in the central part of the Donets Basin. Ugol' Ukr. 7 no.7:4-9 J1 '63. (MIRA 16:8)

1. Institut gornogo dela AN UkrSSR. 2. Chlen-korrespondent AN UkrSSR (for Tatomir).
(Donets Basin--Coal mines and mining)

TATAMIR, K.I.; ANDREYEV, I.N.

effect of air D. large scale collection of ... in ...
ing. soil deposits. (b). from. (nat.
5-14 '63 (1964, 1965)

ANDREYEV, I.N., otv. za vypusk; KRISHTAL', L.I., red.; VASIL'YEVA,
N.N., tekhn. red.

[Methodological instructions on calculating the costs of
railroad transportation] Metodicheskie ukazaniia po kal'ku-
liatsii sebestoimosti zheleznodorozhnykh perevozok. Mo-
skva, Transzheldorizdat, 1962. 94 p. (MIRA 15:11)

1. Russia (1923- U.S.S.R.) Ministerstvo putey soobshcheniya.
(Railroads—Cost of operation)

ANDREYEV, I.N., inzh.

Underground installation for cooling the air in mine No.29.

Trudy Sem.po gor.teplotekh. no.4:116-120 '62. (MIRA 15:8)

(Donets Basin--Mine ventilation)

PA 227T27

JSR/Electronics - Electron Emission

"Study of Electron Emission From a Metal in the Region of Its Transition From Cold to Thermionic Emission" I.B. Andreyev, Chair of Exptl Phys, Gen Asia State U

"Zhur Tekh Fiz" Vol 22, No 9, pp 1428-1441

Exptl verification of the emission eq within the region of transition from spontaneous to thermionic emission was performed by means of a spherical electron projector, permitting measurement of currents from individual facets of a monocryst emitter. A method to overcome involved difficulties was devised. Changes in

the shape of the emitter during its thermal emission were observed. Indebted to G.N. Shuppe and N.B. Ayzenberg. Received 9 Jun 52.

227T27

227T27

ALIMOV, Sh.A.; ANDREYEV, I.S.; ZYRINA, L.V.

Characteristics of the preparation of ZnS - Cu electroluminophors.
Izv. AN Uz. SSR. Ser. fiz.-mat. nauk no.4:52-56 '61. (MIRA 14:9)

1. Tashkentskiy gosuniversitet imeni V.I.Lenina.
(Luminescent substances) (Zinc sulfide)

ANDREYEV, I.S.; ZYRINA, L.V.; ARZUMAN'YAN, G.B.

Electrolysis as a method for the activation of electroluminophors.
Izv. AN Uz. SSR. Ser. fiz.-mat. nauk no.4:83-87 '61. (MIRA 14:9)

1. Tashkentskiy gosuniversitet imeni V.I.Lenina.
(Luminescent substances) (Electrolysis)

29057

S/154/61/000/005/003/004
B125, B102

24.3560

AUTHORS: Andreyev, I. S., Kisin, V. I.

TITLE: Kinetics of the electroluminescence of zinc-sulfide single crystals activated by copper and chlorine

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 5, 1961, 78 - 84

TEXT: The authors have investigated the luminescence waves of ZnS, Cu, and Cl single crystals (hexahedral prisms grown from ZnS powder in a nitrogen atmosphere) in an alternating electric field of different configurations. Ultraviolet irradiation induced a blue or green luminescence of these crystals: The higher the copper content, the greener the luminescence. In general, the electroluminescence spectrum was equal to the photoluminescence spectrum. The luminescence of the crystal was recorded by a photomultiplier of the type ФЭУ-19М (FEU-19M), the electric signal of which was vertically amplified by an oscilloscope. Observations under an МБС-1 (MBS-1) microscope (42 x) showed that the luminescence comes from the black stripes of the crystal. A contact between crystal and electrode X

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Kinetics of the electroluminescence of ...

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S/166/61/000/005/003/004
B125/B102

increases the intensity of luminescence essentially. In contradistinction to V. Ye. Oranovskiy et al. (v. 2, 29, 1959, No. 1), the intensity of luminescence was not affected by replacing one pair of electron needles by another, or by changing the position of the contact between crystal and needle. In the crystals of one type, the position of the most luminous region depended neither on the direction of the field nor on the position of the electrode contact. In the crystals of the other type, the region adjacent to the contact was the most luminous one. The shape of the luminosity waves depended on the type of crystal and on the configuration of the electrode. If there is only one electrode or none at all, the luminosity waves will exhibit the same shape for any type of crystal. A variation of frequency affected only slightly the shape of the luminosity waves. The crystals grown by the authors were isotropic with respect to electroluminescence properties. The de-excitation of the first great peak (B-peak) and of the second peak (M-peak) depended on the direction of the electric field. The B-peak begins when the field is directed away from the contact electrode and when its absolute value decreases. After having passed through zero, it reaches a maximum when the field is directed toward the electrode. The M-peak begins and ends if the field is directed toward

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Kinetics of the electroluminescence of ...

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S/166/61/000/005/003/004
B125/B102

SUBMITTED: April 1, 1961

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22180

S/048/61/025/CO4/029/048
B117/B212

24,3500

AUTHORS: Andreyev, I. S., Arzumanyan, G. B., and Zyrina, L. V.

TITLE: Various possibilities to stimulate electroluminescence properties of crystals

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 4, 1961, 520-522

TEXT: The present paper was read at the 9th Conference on Luminescence (crystal phosphors). The following test results are given: I. Investigating the effect of production conditions on the characteristic of ZnS-Cu electroluminophors resulted in: 1) The spectra of ZnS-Cu luminophors produced in media without HCl are somewhat shifted towards the short wave region compared to spectra of luminophors which have been produced in media with HCl; 2) the frequency dependence of the luminescence differs at a sinusoidal voltage for luminophors produced in different media; 3) not only the spectrum but also the frequency dependence will change if the annealing temperature is raised; 4) they will experience a similar change if the annealing time is changed. The optimum time is 2 hr;

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B117/B212

Various possibilities to...

5) solvents will have an important but variable effect on luminosity, spectrum and frequency dependence of the luminophors. II. The investigation of the electroluminescence of single crystals has yielded the following results in the field of four electrodes which were normal to each other and at a sinusoidal voltage: 1) Absence of anisotropy of the electroluminescence properties in the crystals investigated; 2) a great influence of the electrode contact on the luminosity and its waves, especially for the case where the luminescent bands are distributed unevenly over the crystal; 3) this effect is connected with the passage of current through the crystal; 4) the form of the luminosity wave may be explained on the assumption that the illumination does not occur simultaneously at each point of the crystal. III. The investigation of luminosity maxima during a $\square$ shaped pulsating voltage applied to a capacitor (without dielectric) showed that: 1) If the potential of the transparent electrode is constantly above the second one, then the maxima of the "swelling" and "decreasing" will develop with the same rate as the voltage changes, i.e., within $\sim 10 \mu\text{sec}$; 2) the drop rate of the luminosity is by one magnitude higher than that of the increase and it is somewhat higher for the swelling maximum than for that of the decreasing maximum;

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Various possibilities to...

S/048/61/025/004/029/048
B117/B212

2) if the potential of the transparent electrode is constantly below that of the 2nd electrode the maximum of the swelling and decreasing will consist of two parts: in part one, as earlier, the luminosity will increase with the rate the voltage increases or decreases; in part two, this will be $1/2 \pm 1/3$ slower. The possibility to use electrolysis for the activation of ZnS luminophors has been investigated. ZnS powder has been put into a quartz container having electrodes of a wanted material then it has been annealed in nitrogen at very high temperatures ($700 \pm 1000^\circ\text{C}$) for a certain time while a current ($0.4 \pm 1 \text{ mA}$) has been sent through. The relative role of the electrolysis and the diffusion during the transfer of activating substance and during the activation process has been investigated with the help of tracer elements. The tests have shown the prevailing role of the electrolysis. Besides, they led to the assumption that the electrolysis might not only determine the acceleration of the transfer of activating elements but also the type of the swelling or it might cause other changes in the phosphor which are favorable for the electroluminescence. In order to check this assumption tests have been made with ZnS-AgNO₃ with the same silver concentration. This compound has been

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Various possibilities to

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B117/B212

annealed under the same conditions for the production of phosphorus but without applying any current. Both luminophers showed a bright blue photoluminescence. The luminophers obtained by annealing did not show electroluminescence. The electroluminescence of the luminophers obtained by electrolysis is characterized by the following data:

Potential in volts	300	400	500	600	700	900
Luminescence in relative units	2	4.5	9.5	13	24	48

The data obtained show that it is possible to use this method for the production of electroluminophers. There are 2 Soviet-bloc references.

ASSOCIATION: Kafedra obschey fiziki Sredneaziat'skoy gos. universiteta im. V. I. Lenina (Department of General Physics of (Soviet) Central Asia State University named V. I. Lenin.)

Card 4/4

40059

24.3500

S/166/62/000/003/007/010
B163/B104

AUTHORS: Andrejev, I. S., Shapiro, L. M.

TITLE: Some characteristics of relaxation processes in powder electroluminophores subject to pulsed excitation

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 13, 1962, 65 - 69 ✓

TEXT: In order to study relaxation processes in electroluminescent condensers experimentally, square wave pulses of variable recurrence frequency (100 to 8000 cps) and amplitude (0 to 700 v), with a rise time of 4 μ sec, were applied to a condenser having a layer of luminescent material 30 to 150 μ thick sedimented between its plates from an aqueous emulsion without a binder. The mark-space-ratio of the pulses was not variable. The time dependence of luminescent radiation was measured by a photomultiplier FEU-19M having one of the condenser electrodes made of conducting glass affixed to its input window. The multiplier output signal was displayed on a cathode ray tube. On studying the shapes of the luminescence peaks at the front and back of each square wave pulse it was found
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Some characteristics of relaxation ...

S/166/62/000/003/007/010
B163/B104

that the rise time of the luminescence peaks is of the order of 3 to $12 \cdot 10^{-6}$ sec and the decay time 4 to $12 \cdot 10^{-5}$ sec. The build-up and decay of the polarization field not only start the luminescence processes but also occasion the quenching of existing luminescence. From the fact that the decay time of the first luminescence peak decreases with increasing recurrence frequency, it is concluded that the recombination processes proceed faster if an outer electrostatic field is applied. In condensers with an appreciable conduction current matters are more complicated, it being found that the processes are slower and more strongly dependent on recurrence frequency. In this case the time dependence of luminescent radiation is governed by the polarity of the condenser, i. e. by whether the metallic or the transparent electrode is negative. It is concluded that where conduction is appreciable there exists not only intrinsic but also induced electroluminescence. There are 2 figures and 3 tables. f.

ASSOCIATION: Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University imeni V. I. Lenin)

SUBMITTED: February 10, 1961
Card 2/2

ANDREYEV, I.S.; SHAPIRO, L.M.

Some characteristics of relaxation processes in powder electro-luminophors under pulse excitation. Izv. AN Uz. SSR. Ser. fiz.-mat. nauk 6 no.3:65-69 '62. (MIRA 15:8)

1. Tashkentskiy gosudarstvennyy universitet imeni Lenina.
(Phosphors)

ANDREYEV, I.S.; KASHIRSKAYA, I.V.; NIKISHINA, N.G.

Concentration changes in the luminescence spectra of various types
of ZnS - Cu phosphors. Nauch. trudy TashGu no.221. Fiz. nauki
no.21:21-30 '63.
(MIRA 17:4)

ANDREYEV, I.S.; KASHIRSKAYA, I.V.

Some characteristics of copper diffusion in ZnS. Nauch. trudy
TashGu no.221. Fiz. nauki no.21:8-20 '63. (MIRA 17:4)

ANDREYEV, I.S.; SHAPIRO, L.M.

Interrelation of the spectral luminescence bands of ZnS - Cu phosphors.
Nauch. trudy TashGu no.221.Fiz. nauki no.21:31-44 '63.
(MIRA 17:4)

ACCESSION NR: AR4032176

S/0058/64/000/002/D056/D057

SOURCE: Ref. zh. Fiz., Abs. 2D450

AUTHORS: Andreyev, I. S.; Belotserkovskaya, S. B.; Kashirskaya, I.V.

TITLE: Effect of prior electrolysis of ZnS on some properties of luminors

CITED SOURCE: Nauchn. tr. Tashkentsk. un-t, vy*p. 221, 1963, 5-7

TOPIC TAGS: luminor, luminophor, phosphor, luminor brightness, luminor electrolysis, copper diffusion time

TRANSLATION: It is established that luminors made on the basis of ZnS subjected to prior electrolysis have a greater brightness. The copper diffusion time necessary to attain the given brightness is in this case somewhat smaller than for ZnS without prior electrolysis. Suggestions concerning the nature of the observed phenomena

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ACCESSION NR: AR4032176

are advanced.

DATE ACQ: 31Mar64

SUB CODE: PH

ENCL: 00

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ACCESSION NR: AR4039861

S/0275/64/000/004/A039/A039
621.383.5

SOURCE: Ref. zh. Elektr. i yeye primeneniye. Sv. t., Abs. 4A233

AUTHOR: Andreyev, I. S.; Arzumanyan, G. B.; Belyalova, R. F.

TITLE: Pulse source for a reference luminous signal intended for stabilizing the gain of a multiplier phototube

CITED SOURCE: Nauchn. tr. Tashkentsk. un-t, vyp. 221, 1963, 45-52TOPIC TAGS: photomultiplier, multiplier phototube, geological survey

TRANSLATION: The luminescence of the glass of a 6N15P tube envelope excited by the current pulses in the tube is used for building the reference signal in a system that stabilizes the photomultiplier gain. The envelope luminescence occurs in the blue and violet regions of the spectrum. Hence, a possibility to suppress the radiation of the tube cathode by means of an FS-1 2-mm thick filter. This was assisted by a reduced to 3.1-v tube-heater voltage. The luminescence reaches its maximum with heater voltages as low as 2.5--3 v. The luminous-pulse amplitude varies approximately 4-fold with an anode-voltage variation of 150--300 v. The circuit is used in the geological survey instruments. Bibliography: 7 titles.

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SUB CODE: BQ, ES

EWJL: 00

ACCESSION NR: AR4034484

S/0058/64/000/003/E066/E066

SOURCE: Ref. zh. Fiz., Abs. 3E527

AUTHOR: Andreyev, I. S.; Arzumanyan, G. B.; Belyalova, R. F.

TITLE: Optical and electric characteristics of photoresistances based on CdS

CITED SOURCE: Nauchn. tr. Tashkentsk. un-t, vy*p. 221, 1963, 45-52

TOPIC TAGS: cadmium sulfide, photoresistance, electroluminescence, light amplifier, integral sensitivity, dark current

TRANSLATION: Photoresistances made of powdered CdS, suitable for electroluminescent light amplifiers and for the registration of weak light fluxes, but with better characteristics than the commercial photoresistances, were produced and investigated. The photoresistances have a large integral sensitivity, large dark resistance, large

Cord 1/2

ACCESSION NR: AR4034484

ratio of light to dark resistances, a broad spectral sensitivity, and a lower inertia than the commercial photoresistances. The light characteristics are nonlinear; the voltage-current characteristics in previously illuminated specimens have a relaxation character, while in those kept in darkness they are almost linear, these singularities being independent of the rate of growth of the field and of the spectral composition of the light. L. Gudy*menko.

DATE ACQ: 10Apr64

SUB CODE: GE, PH

ENCL: 00

Card 2/2

ANDREYEV, Ivan Sergeyevich; SHARANOVICH, P.A., red.

[Use of new types of pneumatic transport equipment in
the aluminum industry] Opyt primeneniia novykh vidov pnev-
motransportnykh ustanovok v aliuminievoi promyshlennosti.
Leningrad, 1965. 20 p. (MIRA 18:10)

ANDREYEV, Iv.[Andreev, Iv.]; VAPTSAROV, Iv.; ELKEOV, Khr.;
ANGELOV, A.; YEVGEN'YEV, Ye.[translator];
PROTOKHENISTOV, T.[translator]; KLYUS, B. [translator];
TALAKOV, A., red.

[Differential diagnosis of the major symptoms of children's
diseases. Translated from the Bulgarian] Differentsial'naia
diagnostika vazhneishikh simptomov detskikh boleznei. [By]
Iv.Andreev i dr. Flodiv, Gos.izd-vo iz. Khristo g. Danova,
1964. 443 p. (MIRA 17:9)

ANDREYEV, I.V

107-57-6-35/57

AUTHOR: Andreyev, I., and Ganzburg, M.

TITLE: A Keyboard Switch with a Common Contact Panel
(Klavishnyy pereklyuchatel' s obshchey kontaktnoy panel'yu)

PERIODICAL: Radio, 1957, Nr 6, pp 36-38 (USSR)

ABSTRACT: A five-key do-it-yourself type panel-mounted control switch is described. A detailed structural drawing with all dimensions is supplied on a special page facing page 32 of the magazine. Four keys are intended for changing wavebands, the fifth for on-off switching of the receiver. Instructions for making all details and assembling the switch are given.

There are five figures in the article and one structural drawing combined with a pictorial diagram facing page 32.

AVAILABLE: Library of Congress

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11/10/82 12/17 V
ANDREYEV, I.; GANZBURG, M.

Band selector for radio-broadcasting receivers. V pom. radioljub.

no.3:48-64 '57.

(MIRA 10:12)

(Radio--Receivers and reception)

ANDREYEV, I.V., inzh.; KARASIN, G.S., inzh.

Design and specification of dial telephone systems for power installations. Elek.sta. 28 no.12:51-54 D '57. (MIRA 12:3)
(Power engineering) (Telephone, Automatic)

Andreyev, I.V.
ANDREYEV, I.V.

Concluding review lessons in the sixth grade. Geog. v shkole
21 no.2:34-42 Mr-Apr '58. (MIRA 11:2)
(Geography--Study and teaching)

ANDREYEV, Igor' Vasil'yevich, BERG, A.I., red.; BURLYAND, V.A., red.;
VANEYEV, V.I., red.; GENISHTA, Ye.N., red.; DZHIGIT, I.S., red.;
KANAYEVA, A.M., red.; KRENKEL', E.T., red.; KULIKOVSKIY, A.A., red.;
SMIRNOV, A.D., red.; TARASOV, F.I., red.; CHECHIK, P.O., red.; SHAMSHUR,
V.I., red.; GANZBURG, M.D., red.; MEDVEDEV, L.Ya., tekhn. red.

[Cabinet designs for radio receivers] Vneshnee oformlenie priemnika.
Moskva, Gos. energ. izd-vo, 1958. 46 p. (MIRA 11:8)
(Radio--Receivers and reception)

MAJIN, I.V., 1968.; MAJINOV, I.V., 1968.

Aerial photograph showing the course of the Amura River for the construction of the B. 100 Hydroelectric Power Station, Muravskoi. No. 111-115
168. (VIR, 1968)

1. Gidromekhanizatsiya (for Muravskoi), 2. Brestskaya (for Brestskaya).
(Tatarskaya) (Brestskaya Hydroelectric Power Station)

ZVENIGORODSKIY, Iosif Solomonovich; KARASIN, Gilel' Samoylovich;
ANDREYEV, I.V., red.; LARIONOV, G.Ye., tekhn.red.

[Construction and operation of intercommunication systems in
electric-power plants and electric substations] Sooruzhenie
i ekspluatatsiya sredstv vnutriob"ektnoi svyazi na elektro-
stantsiyakh i podstantsiyakh. Moskva, Gos.energ.izd-vo, 1959.
287 p. (MIRA 13:11)

(Electric power plants--Communication systems)

(Electric substations--Communication systems)

ANDREYEV, I.V., inzh.; BAZHENOV, I.V.

A unique overhead cable span. Vest. svyazi 21 no.12:16-18 u
'61. (MIRA 14:12)

1. Vsesoyuznyy proyektno-izyskatel'skiy i nauchno-issledovatel'skiy
institut Ministerstva elektrostantsiy SSSR (for Andreyev). 2.
Glavnyy inzh. uchastka svyazi stroitel'stva Bratskoy gidroelektro-
stantsii (for Bazhenov).
(Angara River--Electric lines--Overhead)

ANDREYEV, Igor' Vasil'yevich; DUBROVSKIY, Yu.N., red.; SAVCHENKO,
Ye.V., tekhn. red.

[How to build a radio receiver]Kak sdelat' radiopriemnik.
Moskva, Izd-vo "Znanie," 1961. 32 p. (MIRA 15:7)
(Radio--Receivers and reception)

ANDREYEV, Igor' Vladimirovich; KARASIN, Gillel' Samoylovich;
PODREZOV, V.M., red.; SHIROKOVA, M.M., tekhn. red.

[Over-all automation of telephone communications in electric
power distribution systems] Kompleksnaia avtomatizatsiia te-
lefonnoi sviazi energosistem. Moskva, Gosenergoizdat, 1962.
87 p. (MIRA 15:8)

(Electric power distribution--Communication systems)
(Telephone)

ANDREYEV, I.V.; GANZBURG, M.D.; SOBOLEVSKIY, A.G.; CHESAKOV, S.F.;
SHELENIKOVA, TS.B., red.; MAKONTOVA, H.N., tekhn. red.

[Radio consumer goods] Radiotovary; spravochnik. Leningrad,
Gostorgizdet, 1962. 211 p. (MIRA 15:12)
(Radio--Equipment and supplies) (Phonograph)
(Television)

L 48293-65 EWT(d)/EED-2/EWP(1) Pg-4/Pg-4/Pk-4 IJP(c) BB/GG
 UR/0120/65/000/002/0181/0182

ACCESSION NR: AP5011894

AUTHOR: Andreyev, I. V.; Tsybal, V. P.

TITLE: Logical-tube polarity discriminator

SOURCE: Priboz i tekhnika eksperimenta, no. 2, 1965, 181-182

TOPIC TAGS: polarity discriminator, AND circuit, NOT circuit, logic circuit

ABSTRACT: Three circuits utilizing TKh7G and TKh8G tubes to perform NOT and AND logical functions in remote-control systems are proposed. The firing of the TKh8G tube occurs simultaneously with the arrival of positive signals at its control grids. The TKh7G tube is fired by a low voltage applied to the first control grid and a high voltage applied to the second. The first circuit, shown in Fig. 1 of the Enclosure, has two inputs: a code is passed to the first control grid of both tubes, and firing pulses are applied to the triggering voltage for one tube in that circuit operates on the principle that the triggering voltage for the first in that a triggering potential is continuously applied to the second control grids of the tubes. Therefore, when a 1 code is passed to the common input, the TKh8G tube is fired, and when a 0 code is fed, the TKh7G tube is fired. The third circuit

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ACCESSION NR: AP5011894

(Fig. 3) is designed to obtain cusped pulses in a given time interval relative to the front of the code pulses to be separated. It operates in the relaxation mode and has two inputs as in the first circuit. The tubes are fired on the arrival of a code and a firing pulse. Instantaneously, a discharge of the relaxation capacitance begins, a pulse is separated at the cathode resistor, the potential difference between the cathode and anode drops, and the tube goes out. Orig. art. has: 3 figures. [JR]

ASSOCIATION: none

SUBMITTED: 05Feb64

NO REF SOV: 002

ENCL: 03

OTHER: 000

SUB CODE: EC, DP

ATD PRESS: 3251

Card 2/5

T. 33251-66 EWT(1)

ACC NR: AP6014048

SOURCE CODE: UR/0056/66/050/004/1081/1083

AUTHOR: Andreyev, I. V.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences, SSSR
(Fizicheskiy institut Akademii nauk SSSR)

TITLE: Contribution to the theory of multiple scattering

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50,
no. 4, 1966, 1081-1083

TOPIC TAGS: multiple scattering, Green function, relativistic elec-
tron, scattering cross section, small angle scattering

ABSTRACT: In view of the fact that the theory of multiple scattering involves numerical computations which become more and more complex as the scattering angle increases, the authors use the Green's function method developed by G. A. Milekhin and Ye. S. Fradkin (ZhETF v. 45, 1926, 1963) to obtain an expression for the scattering cross section of relativistic electrons into fairly large angles. This expression, which has logarithmic accuracy, takes into account the finite size of the nucleus and the effect of multiple scattering for the case when the correction to the single-scattering formula is relatively small, it

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L 33294-66

ACC NR: AP6014048

being assumed that the observed cross section differs little from the tail of the single-scattering cross section. When the scattering angle is small and the nucleus is regarded as point-like, the obtained formulas go over with logarithmic accuracy into the known result of G. Moliere (Zs. Naturforsch. v. 32, 78, 1948 and v. 10a, 177, 1955). The author thanks Ye. L. Feynberg for a discussion of the work. Orig. art. has: 10 formulas.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 004/ OTH REF: 005

Card

2/2

LIKHACHEV, V.A.; ANDREYEV, I.V.

Changes in the shape of tin subjected to a cyclic thermal
treatment. Nauch.tekh.inform.biul.LPI no.12:36-43 '58.

(Tin--Thermal properties)

(MIRA 13:2)

LIKHACHEV, V.A.; PETROVA, T.G.; ANDREYEV, I.V.

Irreversible change in the dimensions of cadmium samples subjected to a periodic thermal treatment. Nauch.tekh.inform. biul.LPI no.12:44-55 '58. (MIRA 13:2)
(Cadmium--Thermal properties)

S/126/63/015/003/015/025
E193/E383

AUTHORS: Dityatkovskiy, Ya.M., Andreyev, I.V. and
Gorshkov, V.F.

TITLE: The effect of low melting-point metal coatings on the
mechanical properties of constructional and stainless
steels

PERIODICAL: Fizika metallov i metallovedeniye, v. 15, no. 3,
1963, 435 - 438

TEXT: The effect of Cd, Sn and Zn coatings on the mechanical
properties of the following steels was studied: armco iron;
steel 20, steel 45, 40XHMA (40KhNMA); 30XGSA (30KhGSA);
1X18H9T (1Kh18N9T) and 3X878 (EI878). The coatings, 15 μ thick,
were deposited electrolytically. Their effect on strength and
ductility of the steels at 20 to 900 °C was determined by tensile
tests carried out at a strain rate of 16%/min. Typical results
are reproduced graphically in Fig. 1. The UTS (σ_k , kg/mm²),
reduction in area (ψ) and elongation (δ , %) of armco iron are
plotted against the test temperature (°C), curves 1 and 2
relating, respectively, to uncoated specimens and specimens coated
Card 1/5

The effect of

S/126/63/015/003/015/025
E193/E383

with Cd. In Fig. 2 ψ and δ of steel 45 are plotted against the test temperature for specimens with and without Sn coatings (curves 2 and 1, respectively). The temperature-dependence of ψ of steel 40KhNMA is reproduced in Fig. 3 for uncoated (curve 1) and Zn-coated (curve 2) specimens. Finally, in Fig. 4 the yield point (σ_p , kg/mm²) and ψ of steels EI878 and 1Kh18N9T are plotted against the test temperature for uncoated (curve 1) and Zn-coated (curve 2) specimens. It will be seen that the harmful effect of the Cd, Zn and Sn coatings is confined to the temperature interval between the melting point of each of these metals and a certain critical temperature t_k , depending on the type of steel and its heat-treatment. The existence of t_k is explained in the following manner. Two parallel processes take place during deformation: 1) increase of the stresses associated with the formation of various defects acting as stress-concentrators; 2) stress relaxation, the importance of which increases with temperature. Failure of coated test pieces below t_k takes place by brittle fracture because the stresses associated with stress-risers reach a critical value determined by the magnitude of the

Card 2/5

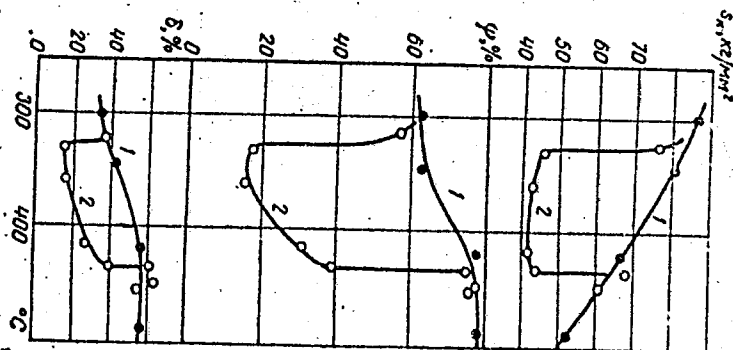
The effect of

S/126/63/015/003/015/025
E193/E383

surface tension at the steel/coating interfaces. At temperatures higher than t_k this critical level of stress is not reached owing to stress relaxation and the specimen fails in a ductile manner. There are 4 figures and 1 table..

SUBMITTED: July 12, 1962

Fig. 1:



Card 3/5

ANDREYEV, I.V.; GOSHEV, V. I.; ... YU. M.

Effect of ... on metal media on the mechanical properties of
steel. ... involved. Intern. obr. met. no. 5:52-54 My '64.
(MIRA 17:6)

GORSHKOV, V.F., ANDREYEV, I.V.

Attachment to the VP-15B-type machine for testing corrosion
cracking. Zav. lab. 30 no.1:109 1972. (MIRA 17:9)

ANDREYEV, I.Ye.

Automatic unit for hardening push rods by high-frequency
current. Stan.1 instr. 30 no.4:39 Ap '59. (MIRA 12:6)
(Metals--Hardening)

ACCESSION NR: AP4037590

S/0056/64/046/005/1764/1767

AUTHOR: Andreyev, I. V.

TITLE: Contribution to the theory of bremsstrahlung in the presence of a medium

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1764-1767

TOPIC TAGS: bremsstrahlung, high energy electron, photoemission, electron scattering, fast particle, particle scattering

ABSTRACT: In order to check whether the cross sections of high energy electron scattering accompanied by photon emission decreases with increasing energy in the presence of a medium, when the photon emission is suppressed, an analysis is made of the scattering and bremsstrahlung of a fast particle in a medium, using a simpler calculation method in lieu of diagram summation. The probability of scattering with a definite energy loss is calculated with double-

Cord 1/2

ACCESSION NR: AP4037590

logarithmic accuracy, and it is found that the effect remains the same, but may be appreciably attenuated. "The author is grateful to Ye. L. Feynberg and Ye. S. Fradkin for numerous useful discussions." Orig. art. has: 10 formulas.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 18Nov63

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: NP

NR REF SOV: 006

OTHER: 001

Cord 2/2

ANDREYEV, I.V.

Theory of bremsstrahlung in the presence of a medium. Zhur.
eksp. i teor. fiz. 46 no.5:1764-1767 My '64.

(MIRA 17:6)

1. Fizicheskii institut imeni Lebedeva AN SSSR.

ACCESSION NR: AP4037068

S/0129/64/000/005/0052/0054

AUTHOR: Andreyev, I. V.; Gorshkov, V. P.; Dityatkovskiy, Ya. M.

TITLE: The effect of a hot-metal medium on the mechanical properties of steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1964, 52-54

TOPIC TAGS: not metal, none austenitic steel, deformation, Cd, Zn, Pb, Sn, intermetallic compound, brittle failure, stress relaxation, supercritical temperature, diffusion, hot dipping.

ABSTRACT: The authors investigated the effects of low-melting metal on the mechanical properties of non-austenitic steels at different temperatures and rates of deformation. The specimens were standard threaded and had a 5 mm diameter. A 15 μ thick cadmium and zinc layer was deposited by sherardizing, lead and tin by hot dipping. At supercritical test temperatures the properties of plated and unplated steel were found to be almost identical. The critical temperature depends on the steel, the coating and the rate of deformation. As the latter increases, the temperature range of the brittle failure is extended while the relative value of the decrease of plastic properties is somewhat lowered. At a low deformation

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ACCESSION NR: AP4037068

rate, the coating has an adverse effect on the steel giving rise to crack formation. Sherardizing conspicuously reduced plastic properties of "45", "40KhNMA" and "30KhGSA" steel within a narrow temperature range. As a result of the formation of intermetallic Fe-Zn compounds, the transformation of the brittle state into the plastic state is irreversible in zinc-plated specimens and reversible in Sn-, Pb- and Cd-plated steels. Stressrupture tests with Cd- and Zn-plated "30KhGSA" steel showed that during the application of low stresses, the time before failure coincides in Cd-plated and unplated specimens. At increased stress application, the time before failure decreases appreciably and deformation is greatly accelerated directly before rupture. Zinc-plating has a greater effect at lowered stress application and prolonged testing periods. A hot metal medium was found to lower the surface energy, inhibit formation of new surfaces and favor crack formation. Elevated temperatures or decreased deformation rates enhance the effects of stress relaxation. In applying supercritical temperatures for a predetermined deformation rate, stresses are inhibited and prevent brittle failure. The authors assume that diffusion processes are significant in the process of stress relaxation. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: None

Card 2/3

ACCESSION NR: AP4037068

SUBMITTED: 00

DATE ACQ: 05Jun64

ENCL: 00

SUB CODE: MM

NO REF SOV: 005

OTHER: 001

Card 3/3

L 61066-65 EPA(W)-2/EMT(1)/EMA(M)-2 P1-1/P2-6 LJP(c) AT
UR/0056/65/048/005/1437/1444

ACCESSION FR: AP5013904

AUTHOR: Andreyev, I. V.

TITLE: An electron in a random field

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 5, 1965, 1437-1444

TOPIC TAGS: electron motion, Green function, random field, nonrelativistic electron, wave propagation, random medium

ABSTRACT: An expression is obtained for the averaged Green's function in a nonrelativistic electron in a statistically homogeneous and isotropic random field. A solution is first obtained for the case of large-scale inhomogeneities; this solution is valid for any magnitude of the potential fluctuations and leads to an expression of the quasi-classical type. The solution is then generalized to include inhomogeneities of arbitrary size. For small scale inhomogeneities, limitations are imposed on the magnitude of the potential in this case. The final expression does not depend on the time and is valid under rather broad assumptions concerning the characteristics of the field. The method employed is quite general and can be used in various problems involving wave equations in a medium with random properties. "The author is most grateful to Ye. L. Feynberg for continuous support, to

Card 1/2

L 61066-65

ACCESSION NR: AP5013904

L. V. Keldysh, D. A. Kirzhnits, V. I. Tatarskiy, and Ye. S. Fredkin for discussions, and to V. M. Finkel'berg, with whom the work was started." Orig. art. has: 32 formulas.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 10Dec64

ENCL: 00

SUB CODE: NP, GP

NR REF SOV: 011

OTHER: 001

KL
Card 2/2

ANDREYEV, K.

Imitation of contamination centers in training activation.
Voen.znan. 34 no.10:35-36 O '58. (MIRA 11:12)
(Chemical warfare)

ANDREYEV, K.; KALEBIN, V.

Replacing lead-acid by alkali storage batteries on ships
of the type "Raketa." Rech. transp. 23 no.7:42-43 J1 '64.
(MIRA 17:10)

1. Nachal'nik elektroradiolaboratorii TSentral'nogo
konstruktorskogo byuro po sudam na podvodnykh kryl'yakh
(for Andreyev). 2. Starshiy inzh. elektroradiolaboratorii
TSentral'nogo konstruktorskogo byuro po sudam na podvodnykh
kryl'yakh (for Kalebin).

L 20965-65 SBN/ASD(p)-3/APOC(a)/RAEM(c)
ACCESSION NR: AP5001378

S/0310/64/000/007/0042/0043

AUTHORS: Andreyev, K. (Head of electroradio laboratory); Kalebin, V. (Senior engineer)

TITLE: Replacement of lead acid storage batteries with alkali batteries on ships of the "Rocket" type

SOURCE: Rechnoy transport, no. 7, 1964, 12-13

TOPIC TAGS: hydrofoil craft, lead acid battery, nickel cadmium battery, storage battery/ 10KN 45 nickel cadmium battery, "Rocket" ship, SITA lamp, QSR 0.7 transformer, PPN 45 switch, AZS circuit breaker, 100GN24AZ rectifier, VSA100 110 rectifier

ABSTRACT: To remove some disadvantages caused by the use of lead acid batteries, the latter were replaced by alkali batteries on ships of the "Rocket" type. To provide the minimum capacity of 90 amp-hrs, four cadmium nickel batteries (type 10KN-45) were installed in two groups on the ship "Rocket-69". One cell had to be removed from each battery to make it fit into existing space; the two pairs of batteries were connected in series with copper strips. The starter connection was changed from the 12 V to the 24 V terminal to provide sufficient starting voltage,
Cord 1/3

L 20965-65

ACCESSION NR: AP5001378

but no changes in the regulating system (RK-1500 or DMR-400) were necessary. A charging facility consisting of a transformer, selenium rectifiers, and commutation and signalling equipment was designed and constructed as shown in Fig. 1 of the Enclosure. The new alkali batteries operated successfully for 4 months on "Rocket-59", requiring only one addition of water. These batteries have an increased life span of 5-6 years and also save 25-26 kg of weight per ship. Orig. art. has: 3 figures.

ASSOCIATION: TsKB po sudam na podvodnykh kryl'yakh (TsKB for hydrofoil ships)

SUBMITTED: 00

ENCL: 01

SUB CODE: EE, GO

NO REF SOV: 000

OTHER: 000

Card 2/3

L 20965-65
ACCESSION NR: AP5001378

ENCLOSURE: 01

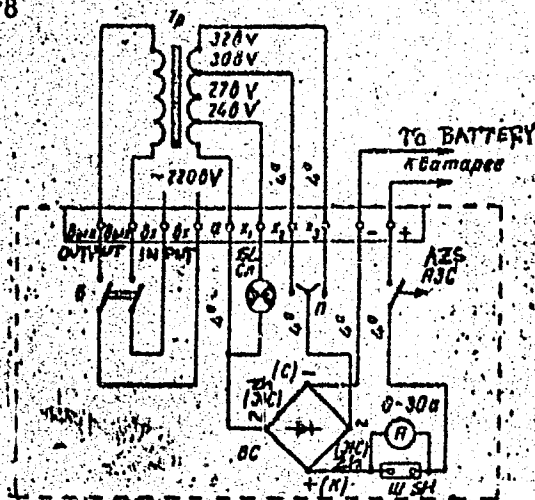


Fig. 1. Schematic of charging circuit: SL- signal lamp type SLTs-51; TR- transformer OSR-0.7; V- switch 6a; P- switch PPN-45; AZS- circuit breaker AZS for 20-25 amps; VS- solenium rectifier consisting of 2 rectifiers, 100GM24AZ or VS100-100; (notation on rectifier zh-a.c.; k-d.c.+; o-d.c.-; wire area = 1 mm²).

Card 3/3

ANNALS, 1.

Intervju [Interview], "Mladost", No. 1, 1990.

2010.01.14

ANDRYEV, K.

Birth of the planet. Tekh. volod. 20 No. 5, 1962

SO: MIA. July 1962.

1. ANDREYEV, Kirill
2. USSR (600)
4. United States - Description and Travel
7. Through the eyes of the Jules Verne. Tekh.molod. 20 no. 12, 1952.

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

ANDREYEV, K.

At a model of the earth. Tekh.mol. 21 no.12:13 D '53.

(MIRA 6:11)
(Globes)

ANDREYEV, Kirill.

Journey toward the center of the earth. Tekh.mol. 21 no.12:14-17 D '53.

(MLRA 6:11)

(Earth--Internal structure)

ANDREYEV, Kirill.

The riddle of Mars ("The riddle of Mars." F.Zigel'; "Astrobiology."
G.A.Tikhov. Reviewed by Kirill Andreev). Vokrug sveta no.1:61-63
Ja '54. (MLRA 7:1)
(Zigel', F.IU.) (Tikhov, G.A.) (Mars (Planet))

ANDREYEV, Kirill.

~~Source: [illegible]~~

Colors of the sea. Znan.sila no.3:31-32 Mr '54.

(MLRA 7:2)
(Sea water)

ANDREYEV, Kirill.

Marine salt. Vokrug sveta no.5:35-38 My '54. (MLRA 7:6)
(Sea-water) (Salt)

ANDREYEV, Kirill.

A Young Communist is a corresponding member of the Academy of Sciences of the U.S.S.R. Tekh.mol. 22 no.2:11-12 F '54.

(Mathematicians) (Mergelian, Sergei Nikitovich, 1927-) (MLRA 7:2)

ANDREYEV, K.

"The sun and its family." Mikhail Petrovich Ivanovskii.
Reviewed by A. Andreev. Vokrug sveta no.6:61-62 Je '55.
(MIRA 8:9)
(Ivanovskii, Mikhail Petrovich) (Solar system)

ANDREYEV, Kirill.

The riddle of permafrost. Tekh.mol. 23 no.3:26-29 Mr '55.
(Frozen ground)

(MIRA 8:4)

ANDREYEV, Kirill

"Intelligence Machines," Ogonek, No.52, 25 Dec 55, Moscow.

Three-page article describing operational features and capabilities of various electronic computers.

Sum. No. 868, 23 Mar 56

ANDREYEV, Kirill

Marine luminescence. IUn. tekhn. 4 no.10:49-55 U '59.

(Fluorescence)

(MIRA 13:1)

ANDREYEV, K.A.

Lengthen the interval between shop repairs of snow removal machinery. Zhel.dor.transp. 45 no.8:81 Ag '63. (MIRA 16:9)

1. Nachal'nik mekhanizirovannogo uchastka Krasnolimanskogo otdeleniya Donetskoy dorogi.

(Railroads--Equipment and supplies)

ANDREYEV, Kim Aleksandrovich

[Kivach Preservo] Zapovednik Kivach. Petrozavodsk, Kareli-
skoe knizhnoe izd-vo, 1963. 78 p. (MIRA 17:10)

ANDREYEV, Konstantin Alekseyevich; GORDEVSKIY, D.Z.; CHERNYSHENKO, Ya.T.,
tekhnicheskij redaktor.

[Selected studies] Izbrannye raboty. Khar'kov, Izd-vo Khar'kov-
skogo gos.univ.im.A.M.Gor'kogo, 1955. 90 p. (MLRA 9:6)
(Geometry)

USSR/Farm Animals - Small Horned Stock

Abs Jour : Ref Zhur - Biol., No 15, 1958, 69340

Author :
Last :
Title :

Andreyev, K.D., Modyanov, A.V.

Feed Rations for Pregnant Ewes with Utilization of Corn
Silage and Threshing Floor Feeds

Orig Pub : Ovtsevodstvo, 1957, No 10, 42-45

Abstract : An experiment was carried out during 105 days on three groups (30 heads each) of pregnant ewes. The first group was given rye (0.69 kg), millet (0.62 kg) straw and corn silage (3.36 kg); in the second group millet straw was replaced by legume hay (0.90 kg); the third group received the same feeds as the first one plus concentrates (sunflower oil meal, 0.10 kg, and a mixture of roughages and concentrates prepared industrially, 0.14 kg). After lambing, the ewes of all groups received identical rations. The spring wool yield in 1956,

APPROVED FOR RELEASE: 03/20/2001

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USSR/Farm Animals - Small Horned Stock

Q

Abs Jour : Ref Zhur - Biol., No 15, 1958, 69340

as compared with 1955, increased in the 1st group by 520 g. (122%), and in the 3rd group by 630 g. (127%). The live weight after lambing in ewes of the 1st group was less than the initial one by 2.1 kg, in the 2nd by 0.7 kg, and in the 3rd it was 0.2 kg higher. The average weight of newborn lambs was: in the 1st group 3.85 kg, in the 2nd 3.90 kg, and in the 3rd 4.15 kg. In the colostrum of ewes of all groups a high content of vitamin A (0.579-0.679%) was noted. Gastrointestinal and pulmonary diseases among lambs were absent. The authors point out that the inclusion of corn silage into winter rations of pregnant ewes increases the value of feeding and productiveness of animals. However, rations consisting solely of threshing floor feeds and corn silage are not sufficient for ewes in the second period of pregnancy, and in the first half of nursing. To supplement the rations with protein and mineral substances, additional

Card 2/3

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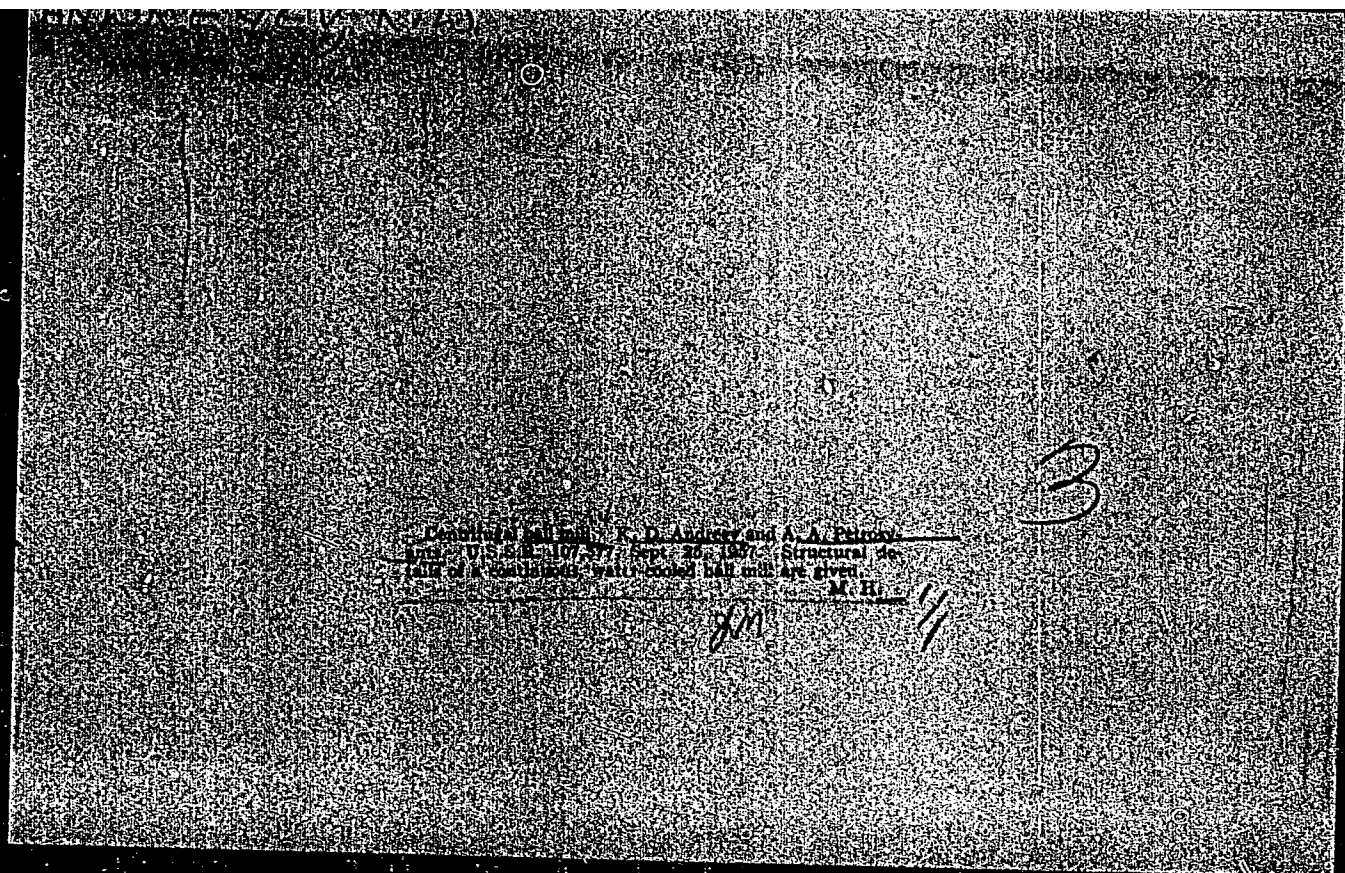
USSR/Farm Animals - Small Horned Stock

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Abs Jour : Ref Zhur - Biol., No 15, 1958, 69340

feeding of ewes with protein concentrates, non-protein
nitrogen compounds - urea, ammonium salts and the use
of legumes is recommended. -- M.F. Demina

Card 3/3



ANDREYEV, K.I.; PREOBRAZHENSKIY, M.A.

[Over-all mechanization in warehouses and intershop transport of the
machine-building industry] Kompleksnaya mekhanizatsiya na skladakh
i mezhtsekhovom transporte v mashinostroenii. M, Mashgiz, 1952.
[314 p.] (MLRA 8:4)
(Loading and unloading)

* ANDREYEV, K.I.

PETRENKO, O.S.; ANDREYEV, K.I., inzhener, redaktor; GOLOVIN, S.Ya.,
inzhener, redaktor.

[Factory overhead conveyers] Podvesnoi vmutrizavodskii transport.
Izd. 2., perer. 1 dop. Moskva, Gos. nauchno-tekhn. izd-vo mashino-
stroit. lit-ry, 1953. 382 p. (MIRA 7:1)
(Conveying machinery) (Factories--Equipment and
supplies)

ANDREYEV, K.I.

USSR/ Engineering—Conveyor systems

Card 1/1 : 128—32/33

Authors :

Title : Review of book, "Complex Mechanization in Warehouses and Inter-Shop Transportation in Machine Manufacture"

Periodical : Vest. mash. 34/8, 103-105, Aug 1954

Abstract : A review is presented of the book, "Complex Mechanization in Warehouses and Inter-Shop Transportation in Machine Manufacture," by K. I. Andreev and M. A. Preobrazhenskiy, published by MASHGIZ, 1952, 314 pages. The comments are mostly unfavorable.

Institution :

Submitted :

ANDREYEV, K.I., inzhener, redaktor; KAMIONSKIY, L.M., inzhener, redaktor;
POPOLOV, Ya.N., redaktor izdatel'stva; UVAROVA, A.F., tekhnicheskiy
redaktor

[Efficient use of shavings and other wastes from ferrous and non-
ferrous metals; a collection of articles] Ratsional'noe ispol'zovanie
struzhki i drugikh otkhodov chernykh i tsvetnykh metallov; sbornik
statei. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry,
1956. 525 p. (MLRA 9:8)
(Scrap metal industry)

ANDREYEV, K.I., inzh.

~~_____~~
Mechanize the collection and use of metal cuttings. Mekh.trud.rab.
11 no.8:6-11 Ag '57. (MIRA 10:11)
(Metal cutting) (Salvage (Waste, etc.))

ANDREYEV, K. I.

PREOBRAZHENSKIY, M.A., kand.tekhn.nauk, starshiy nauchnyy sotrudnik;
ANDREYEV, K.I., inzh., red.; SALYANSKIY, A.A., red.izd-va;
SOKOLOVA, G.F., tekhn.red.; SOKOLOVA, T.F., tekhn.red.

[Means for minor mechanization of loading and unloading, and conveying operations] Sredstva maloi mekhanizatsii dlia pogr-zochno-razgruzochnykh i transportnykh rabot. Sost. M.A.Preobrazhenskiy. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 246 p. (MIRA 13:1)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut pod"yemno-transportnogo mashinostroyeniya. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut pod"yemno-transportnogo mashinostroyeniya (VNIIPTMASH) (for Preobrazhenskiy).
(Loading and unloading) (Conveying machinery)

SMEKHOV, A.A.; MEKLEN, A.F., kand. tekhn. nauk, retsenzent; SAVKIN, A.M., kand. ekon. nauk, retsenzent; ANDREYEV, K.I., inzh., red.; BARYKOVA, G.I., red. izd-va; UVAROVA, A.F., tekhn. red.

[Automation in warehouses] Avtomatizatsiia na skladakh. Moskva, Mashgiz, 1962. 267 p. (MIRA 15:12)
(Warehouses--Equipment and supplies) (Automation)

GOTMAN, P.Ye.; DEMICHEV, G.M.; PREOBRAZHENSKIY, M.A.; VAYSMAN,
B.A.; ORLOV, S.P.; ANDREYEV, K.I.; TARASOV, V.P., irzh.,
retsensent

[Storerooms in machinery plants; a handbook] Sklady na
zavodakh mashinostroeniia; spravochnik. [By] P.E.Gotman i
dr. Moskva, Mashinostroenie, 1964. 722 p. (MIRA 17:12)

AYLKE(E), K.K.

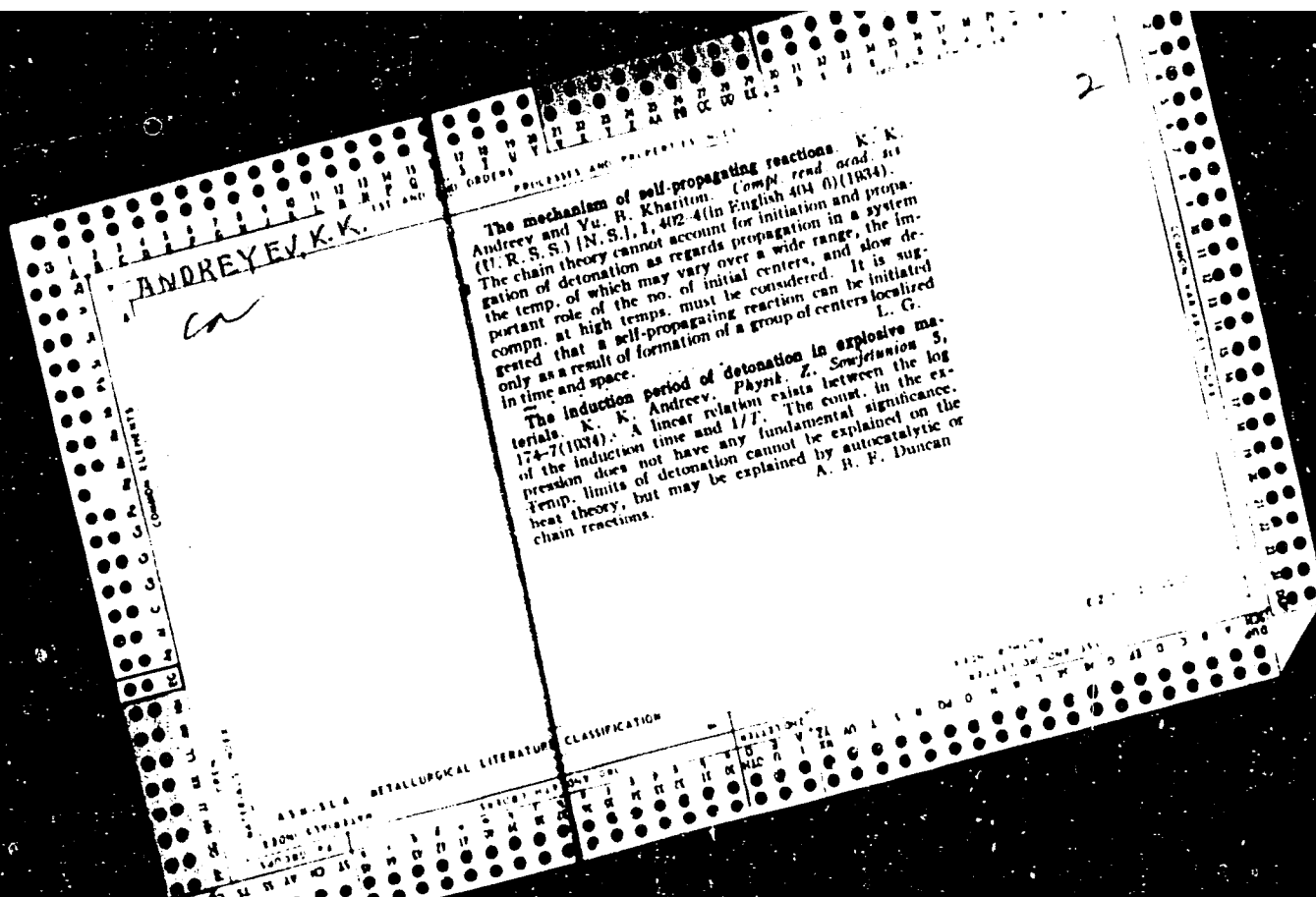
9

4584. Theory of Detonation. K. K. Andreev. *Phys. Ziti. d. Sowjetunion*, 4: 1 pp. 120-124, 1933. *In German*. Owing to the extraordinarily quick propagation of exothermal chemical change through the mass of a condensed explosive system, the chain mechanism of the reaction must be of prime importance. The importance of the chain in detonation has been emphasised by Garner, Semenov, Muramir and others. The author endeavours to show that the circumstances necessary for the existence of an infinitely long chain are much more favourable in the case of primary explosive substances than in secondary explosive substances. He gives a formula from which the total length of chain can be determined, and also calculates the difference between the heat of activation and the energy of a particle of the reaction product. A

table is given for six explosives. It is seen that the heat of activation is approximately twice as great for secondary explosives as for primary ones. E. B.

ANAL. DETAIL LITERATURE CLASSIFICATION

11



ANDREYEV, K. K.		PROCESSED AND PREPARED FOR RELEASE	
CH		The kinetics of the thermal decomposition of calcium nitride. K. K. Andreyev. <i>Physik. Z. Sowjetunion</i> 6, 121-34 (1934).--The thermal decompn. of Ca_3N_2 is a topochem. reaction beginning with an "induction" period during which reaction nuclei are destroyed by impurities. The induction period is followed by one in which the reaction velocity is proportional to the $1/2$ power of the pressure and in the last stage the reaction is of the first order. The increment for the growth of nuclei increases from 90 Cal. at 70° to 86 Cal. at 135°. The reaction products at low temps. are CaN or Ca_2N_2, the nitride for slow heating at high temp., and the nitride + Ca for rapid heating at high temp. The detonation temp. is 110° in vacuum and 143° in air. The anomalous explosive behavior of Ca_3N_2 is explained on the basis of the kinetics of the decompn.	
ASH-SLA METALLURGICAL LITERATURE		CLASSIFICATION	
RECORDS BY NAME		RECORDS BY TOPIC	
RECORDS BY DATE		RECORDS BY SOURCE	